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<b>ENGINEERING CHANGE NOTICE</b>	1. ECN <b>631966</b>
Page 1 of <u>2</u>	Proj. ECN

<b>2. ECN Category (mark one)</b> Supplemental <input type="checkbox"/> Direct Revision <input checked="" type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedeure <input type="checkbox"/> Cancel/Void <input type="checkbox"/>	<b>3. Originator's Name, Organization, MSIN, and Telephone No.</b> LA Domnoske-Rauch/DST Engineering/S5-13/376-9886		<b>4. USQ Required?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>5. Date</b> 2/22/2001
	<b>6. Project Title/No./Work Order No.</b> NA		<b>7. Bldg./Sys./Fac. No.</b> Double Shell Tanks	<b>8. Approval Designator</b> NA
	<b>9. Document Numbers Changed by this ECN (includes sheet no. and rev.)</b> HNF-3484 Rev 3		<b>10. Related ECN No(s).</b> NA	<b>11. Related PO No.</b> NA
	<b>12a. Modification Work</b> <input type="checkbox"/> Yes (fill out Bk. 12b) <input checked="" type="checkbox"/> No (NA Bk. 12b, 12c, 12d)		<b>12b. Work Package No.</b> NA	<b>12c. Modification Work Completed</b> NA Design Authority/Cog. Engineer Signature & Date

13a. Description of Change 1/1/01 13b. Design Baseline Document? ☐ Yes ☒ No  
 Revise page 2, Section 1.2 of Double Shell Tank Emergency Pumping Guide, HNF-3484 Revision 3, to include the following statement:

"The Authorization Basis requirements for DST Emergency Pumping are implemented through operating procedures and work packages."

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<b>14a. Justification (mark one)</b> Criteria Change <input checked="" type="checkbox"/> Design Improvement <input type="checkbox"/> Environmental <input type="checkbox"/> Facility Deactivation <input type="checkbox"/> As-Found <input type="checkbox"/> Facilitate Const. <input type="checkbox"/> Const. Error/Omission <input type="checkbox"/> Design Error/Omission <input type="checkbox"/>	<b>14b. Justification Details</b> This statement clarifies that the DST Emergency Pumping Guide is a guide only and Authorization Basis requirements are implemented in operating procedures and work packages. This change to the document will not change collective dose since it has no impact on radiological sources, contamination control, or shielding.
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<b>15. Distribution (include name, MSIN, and no. of copies)</b> LA Domnoske-Rauch S5-13 RG Harwood H6-60 DB Smet R1-56 DW Reberger S5-13 MR Koch S7-24 RP Tucker T4-07 TC Oten S5-05 DC Larson T4-08 RJ Brown S4-46 CE Shippler S6-17 PC Miller R1-51 JH Bryce S7-83 HR Hopkins R2-58 MH Brown T4-07 GT Frater T4-08 WE Bryan T4-07 RW Reed T4-07 BG Erlandson R1-51 D Scott, JR S8-07	<b>RELEASE STAMP</b> <div style="border: 1px solid black; padding: 10px; text-align: center;">         DATE: <b>FEB 23 2001</b>          STA:           HANFORD RELEASE          ID. <u>2</u> </div>
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# ENGINEERING CHANGE NOTICE

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1. ECN (use no. from pg. 1)

ECN 631966

## 16. Design Verification Required

☐ Yes  
☒ No

## 17. Cost Impact

### ENGINEERING

Additional ☐ \$ NA  
Savings ☐ \$ NA

### CONSTRUCTION

Additional ☐ \$ NA  
Savings ☐ \$ NA

## 18. Schedule Impact (days)

Improvement ☐ NA  
Delay ☐ NA

## 19. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 13. Enter the affected document number in Block 20.

SDD/DD	<input type="checkbox"/>	Seismic/Stress Analysis	<input type="checkbox"/>	Tank Calibration Manual	<input type="checkbox"/>
Functional Design Criteria	<input type="checkbox"/>	Stress/Design Report	<input type="checkbox"/>	Health Physics Procedure	<input type="checkbox"/>
Operating Specification	<input type="checkbox"/>	Interface Control Drawing	<input type="checkbox"/>	Spares Multiple Unit Listing	<input type="checkbox"/>
Criticality Specification	<input type="checkbox"/>	Calibration Procedure	<input type="checkbox"/>	Test Procedures/Specification	<input type="checkbox"/>
Conceptual Design Report	<input type="checkbox"/>	Installation Procedure	<input type="checkbox"/>	Component Index	<input type="checkbox"/>
Equipment Spec.	<input type="checkbox"/>	Maintenance Procedure	<input type="checkbox"/>	ASME Coded Item	<input type="checkbox"/>
Const. Spec.	<input type="checkbox"/>	Engineering Procedure	<input type="checkbox"/>	Human Factor Consideration	<input type="checkbox"/>
Procurement Spec.	<input type="checkbox"/>	Operating Instruction	<input type="checkbox"/>	Computer Software	<input type="checkbox"/>
Vendor Information	<input type="checkbox"/>	Operating Procedure	<input type="checkbox"/>	Electric Circuit Schedule	<input type="checkbox"/>
OM Manual	<input type="checkbox"/>	Operational Safety Requirement	<input type="checkbox"/>	ICRS Procedure	<input type="checkbox"/>
FSAR/SAR	<input type="checkbox"/>	IEFD Drawing	<input type="checkbox"/>	Process Control Manual/Plan	<input type="checkbox"/>
Safety Equipment List	<input type="checkbox"/>	Cell Arrangement Drawing	<input type="checkbox"/>	Process Flow Chart	<input type="checkbox"/>
Radiation Work Permit	<input type="checkbox"/>	Essential Material Specification	<input type="checkbox"/>	Purchase Requisition	<input type="checkbox"/>
Environmental Impact Statement	<input type="checkbox"/>	Fac. Proc. Smp. Schedule	<input type="checkbox"/>	Tickler File	<input type="checkbox"/>
Environmental Report	<input type="checkbox"/>	Inspection Plan	<input type="checkbox"/>	none	<input checked="" type="checkbox"/>
Environmental Permit	<input type="checkbox"/>	Inventory Adjustment Request	<input type="checkbox"/>		<input type="checkbox"/>

## 20. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number/Revision
None	NA	NA

## 21. Approvals

Signature	Date	Signature	Date
Design Authority <i>[Signature]</i>	2/22/01	Design Agent	
Cog. Eng. <i>[Signature]</i>	2/22/2001	PE	
Cog. Mgr. <i>[Signature]</i>	2/22/01	QA	
QA		Safety	
Safety		Design	
Environ. <i>[Signature]</i>	2/23/01	Environ.	
Other		Other	

### DEPARTMENT OF ENERGY

Signature or a Control Number that tracks the Approval Signature

### ADDITIONAL

## Double-Shell Tank Emergency Pumping Guide

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Richland, WA 99352  
U.S. Department of Energy Contract DE-AC06-99RL13200


EDT/ECN: 631966 UC: 2020  
Org Code: CL243100 Charge Code: 111273  
B&R Code: EW3130010 Total Pages: 55

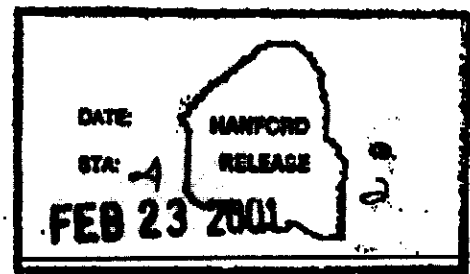
**Key Words:** Double Shell Tank, Annulus Emergency Pumping, Tank Farm  
Emergency, Pumping, Secondary Containment, Annulus

**Abstract:** This document provides preplanning necessary to expeditiously remove any waste that may leak from the primary tank to the secondary tank for Hanford's 28 DSTs. The strategy is described, applicable emergency procedures are referenced, and transfer routes and pumping equipment for each tank are identified.

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Release Approval Date 2/23/01



Approved For Public Release

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## **1 GENERAL INFORMATION**

### **1.1 Purpose, Scope, and Background**

The purpose of this plan is to provide as much preplanning as practical for pumping waste out of the annulus or secondary containment of Double-Shell Tanks (DST). If the primary tank leaks, waste would accumulate in the secondary tank. For the purposes of this report, the terms "secondary tank" and "annulus" are used interchangeably. The preplanning will expedite emergency pumping and provide the basis for demonstrating that the leaked waste will be "removed from the secondary containment system within 24 hours, or in as timely a manner as is possible" as required by the Washington Administrative Code.

There are 177 large underground waste storage tanks in the Hanford 200 East and 200 West Areas. There are 149 single-shell tanks (SSTs), and 28 DSTs. The scope of this plan includes all 28 of the Hanford DSTs in AN, AP, AW, AY, AZ and SY Tank Farms. The scope also includes the transfer lines, pump pits, valve pits, jumpers, transfer pumps, sump pumps, and procedures necessary to accomplish the emergency pumping.

An alternative study (ARES, 1999) was completed in March 1999 to identify a cost effective method of maintaining emergency annulus pumping equipment in a reliable condition. RPP's management has approved funds for Fiscal Year 2000 activities to refine and implement the study's recommendation.

### **1.2 Summary of Information Provided**

This guide contains a general description of the DSTs and discussions of the requirements, strategy, transfer routes, procedures, and equipment that will be used to expeditiously respond to a leaking DST. References to statutory requirements are included. The Authorization Basis requirements for DST Emergency Pumping are implemented through operating procedures and work packages. Information for each DST about the waste transfer routes, procedures, and equipment required for the transfers are contained or referenced in the appendices. These include:

#### ***Appendix A: PROPOSED TRANSFER ROUTES***

Contains a tabulated summary description of the proposed transfer route for each DST. Routes are included for transferring the waste from the primary tank to the designated receiver tank and to an alternate receiver tank. Tank AP-108 is the designated receiver tank and AP-107 is the alternate receiver tank for emergency transfers from all DSTs except from the aging waste tanks AZ-101 and AZ-102. The designated and alternate receiver tanks for emergency transfers from AZ-101 and AZ-102 are AY-101 and AY-102 respectively. The receiver tank for both 101-SY and 103-SY is tank 108-AP or 107-AP via tank 102-SY.